

REMARKS

As noted above, this application is a division of Serial No. 09/872,842, filed June 1, 2001 and claims priority from Japanese Application Serial No. 2000-167377, filed June 5, 2000 and Japanese Application Serial No. 2000-330066, filed October 30, 2000.

New Claim 9 of this divisional application corresponds to the original claim 8 of the prior application with the added recitation of the refractive index (nd) being within a range from 1.49 to 1.6. Claim 11 of this application corresponds to original claim 8 of the prior application with the added recitation that the Abbe number (vd) is within a range from 69 to 82. New Claim 13 of the divisional application 1 corresponds to the original claim 8 with the added recitation that the Abbe number is within a range from 95.1 to 97.1.

The newly presented claims are distinguishable from the references that were cited in the prior application for the following reasons.

Attached hereto are Tables 1 and 2 which have been prepared to facilitate a comparison of the claims of the divisional application 1 with the cited references. In these tables, the mark "OK" represents that the amount of an ingredient in an example of the cited references is out of the range of the ingredients in the claims of the new claims and the mark "x" represents that this amount of the cited reference is within the amount range of the ingredient in the new claims of this application.

The glass of new claims 9, 11 and 13 of the present application is a P_2O_5 - Al_2O_3 -alkaline earth fluoride glass which is a glass made of ingredients which are entirely different from the glass of the cited reference which is a SiO_2 - B_2O_3 - Al_2O_3 -alkali metal oxide glass. Thus, the claims point out a glass composition which is clearly different from the cited reference. This is evident from the attached Table 1.

Specifically, the glasses of claims 9, 11 and 13 of the divisional application differ from the glass of the cited

reference because the new claims point out a glass having 4-39% P_2O_5 , 10-47% BaF_2 , $MgF_2+CaF_2+SrF_2+BaF_2=30-70\%$ and 10-45% F.

In the glass of the present application, P_2O_5 is an indispensable ingredient for forming glass. If the amount of this ingredient is less than 4%, it is difficult to provide a stable glass having excellent resistivity to devitrification and, if the amount of this ingredient exceeds 39%, the Abbe number becomes too small and the low dispersion characteristic which is an advantageous feature of the composition of the invention becomes difficult to attain.

MgF_2, CaF_2, SrF_2 and BaF_2 are effective for preventing devitrification of the glass. Particularly, if the amount of BaF_2 is less than 10%, it becomes difficult to obtain a chemically stable glass.

The amount of F should be 10-45% in order to minimize the change in the refractive index of the glass due to the compaction phenomenon.

In the examples of the cited reference, there is no glass that satisfies even one of the above described compositions concerning P_2O_5 , BaF_2 , $MgF_2+CaF_2+SrF_2+BaF_2$ and F and there is no disclosure or suggestion in the cited reference as to the concept of the present invention for restricting the ranges of the amounts of these ingredients.

The glass of claims 9, 11 and 13 of the present application is a $P_2O_5-Al_2O_3$ -alkaline earth fluoride glass made of essential ingredients which are entirely different from the glass of the cited reference which is a $SiO_2-B_2O_3-Al_2O_3$ -alkali metal oxide/fluoride glass and thus has a glass composition which is largely different from the cited reference. This is evident from Table 2.

Specifically, the glass of new claims 9, 11 and 13 of the present application differs from the glass of the cited reference in that the new claims point out that the glass contains 4-39% P_2O_5 , 10-47% BaF_2 , $MgF_2+CaF_2+SrF_2+BaF_2=30-70\%$ and 10-45% F.

In the glass of the present application, the amount of P_2O_5 should be in the range of 4-39%, the amount of BaF_2 should be in

the range of 10-47%, the amount of BaF_2 should be in the range of 10-47%, the amount of $\text{MgF}_2 + \text{CaF}_2 + \text{SrF}_2 + \text{BaF}_2$ should be in the range of 30-70% and the amount of F should be in the range of 10-45% for the reason stated above with respect to comparison with JP60-200842.

In the examples of the cited reference, there is no glass that satisfies even one of the above described characteristics of compositions concerning P_2O_5 , BaF_2 , $\text{MgF}_2 + \text{CaF}_2 + \text{SrF}_2 + \text{BaF}_2$ and F and there is no disclosure or suggestion in the cited reference as to the concept of the present invention for restricting the ranges of the amounts of these ingredients.

The glass of claims 9, 11 and 13 of the present application, which is a P_2O_5 - Al_2O_3 -alkaline earth fluoride glass, is made of essential ingredients which are entirely different from the glass of the cited reference which is a SiO_2 - PbO -alkali metal oxide glass. The claimed glass has a glass composition which is substantially different from the cited reference.

Specifically, the glass of claims 9, 11 and 13 of the present application differs from the glass of the cited reference in that the claimed glass contains 4-39% P_2O_5 , 10-47% BaF_2 , $\text{MgF}_2 + \text{CaF}_2 + \text{SrF}_2 + \text{BaF}_2 = 30-70\%$ and 10-45% F.

In the glass of the present application, the amount of P_2O_5 ranges from be 4-39%, the range of BaF_2 should be 10-47%, the range of BaF_2 , $\text{MgF}_2 + \text{CaF}_2 + \text{SrF}_2 + \text{BaF}_2$ should be 30-70% and the range of F should be 10-45% for the reason stated above with respect to comparison with JP60-200842.

In the examples of the cited reference, there is no glass that satisfies even one of the above described compositions concerning P_2O_5 , BaF_2 , $\text{MgF}_2 + \text{CaF}_2 + \text{SrF}_2 + \text{BaF}_2$ and F and there is no disclosure or suggestion in the cited reference as to the concept of the present invention for restricting the ranges of the amounts of these ingredients.

Further, the glass of claim 9 of the present application differs basically from the glass of the cited reference in optical properties. Specifically, the refractive index (nd) of the glass of the cited reference is 1.65-1.85 whereas the

refractive index of the glass of claim 9 of the divisional application 1 is 1.49-1.6. There is no disclosure or suggestion in the cited reference about a composition for realizing the refractive index (nd) of the present invention.

The glass of claim 9 of the present application differs basically from the glass of the cited reference in optical properties. Specifically, the refractive index (nd) of the glass of the cited reference is 1.40-1.475 whereas the refractive index of the glass of claim 9 of the present application is 1.49-1.6. There is no disclosure or suggestion in the cited reference about a composition for realizing the refractive index (nd) of the present invention.

The glass of claim 11 of the present application differs basically from the glass of the cited reference in optical properties. Specifically, the Abbe number (vd) of the glass of the cited reference is 83-94 whereas the Abbe number of the glass of claim 11 of the divisional application 1 is 69-82. There is no disclosure or suggestion in the cited reference about a composition for realizing the Abbe number (vd) of the present invention.

The glass of claim 13 of the present application differs basically from the glass of the cited reference in optical properties. Specifically, the Abbe number (vd) of the glass of the cited reference is 83-94 whereas the Abbe number of the glass of claim 13 of the present application is 95.1-97.1. There is no disclosure or suggestion in the cited reference about a composition for realizing the Abbe number (vd) of the present invention.

For these reasons, none of the cited references discloses or suggests the specific limitation of the claims of the present application and, therefore, the glasses of the present application are not anticipated by or obvious from any of these cited references singly or in combination.

An early and favorable action is earnestly solicited.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'JVC', is written over the printed name.

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